

WHAT IS CLAIMED IS:

1. A programmable peripheral switch for selectively connecting a peripheral device to a server computing device comprising:
  - a peripheral port for electrically coupling the peripheral device thereto;
  - a plurality of host computer ports, each of said host computer ports for electrically coupling a respective one of a plurality of computing devices thereto;
  - host port state detection means electrically coupled to each of said host computer ports for detecting the state of each of said plurality of host computer ports;
  - switching means electrically interposed between said peripheral port and each of said host computer ports for providing a communication path between the peripheral device and one of said host computer ports at a state indicative of the server computing device being coupled thereto; and
  - local handshaking means electrically coupled to said peripheral port for simulating communication from the server computing device to the peripheral device if none of said plurality of host computer ports is at said state indicative of the server computing device being coupled thereto.

2. The programmable peripheral switch as recited in Claim 1 further including at least one protocol conversion means, each of said protocol conversion means electrically interposed between said peripheral port and a respective one of said plurality of host computer ports, said protocol conversion means for converting a communications protocol of the peripheral device to a communications protocol of a computing device coupled to said respective one of said plurality of host computer ports.

3. The programmable peripheral switch as recited in Claim 2, wherein either one of said communications protocol of said peripheral device and said communications protocol of said computing device is a digital serial data communications protocol.

4. The programmable peripheral switch as recited in Claim 3, wherein said digital serial data communications protocol transmits data over a single conductor, said data encoded as a voltage on said single conductor as referenced to a common signal ground.

5. The programmable peripheral switch as recited in Claim 3, wherein said digital serial data communications protocol transmits data over a pair of conductors, said data encoded as a voltage difference between said pair of conductors as referenced to a common signal ground.

6. The programmable peripheral switch as recited in Claim 2, wherein either one of said communications protocol of said peripheral device and said communications protocol of said computing device is a digital parallel data communications protocol.

7. The programmable peripheral switch as recited in Claim 1 further including a plurality of default state generating means, each of said plurality of default state generating means electrically coupled to a respective one of said plurality of host computer ports for inducing in the absence of a computing device coupled thereto a predetermined state therein.

8. The programmable peripheral switch as recited in Claim 7, wherein said default state generating means includes biasing means for applying a voltage to at least one conductor of said respective host computer port, said voltage indicative of said predetermined state.

9. The programmable peripheral switch as recited in Claim 8, wherein said biasing means include a resistor coupled to said at least one conductor and a source of said voltage.

10. The programmable peripheral switch as recited in Claim 1 further including program code execution and storage means for executing and storing programmed instructions.

11. The programmable peripheral switch as recited in Claim 10, wherein said program code execution and storage means is a microcontroller.

12. The programmable peripheral switch as recited in Claim 10, wherein said program code execution and storage means is a complex programmable logic device.

13. The programmable peripheral switch as recited in Claim 10 further including program code alteration means coupled to said program code execution and storage means for altering said programmed instructions.

14. The programmable peripheral switch as recited in Claim 10, wherein said programmed instructions include a predetermined set of peripheral command codes and a set of corresponding peripheral response codes.

15. The programmable peripheral switch as recited in Claim 14, wherein said simulated communication of said local handshaking means includes transmitting one of said set of peripheral response codes to the peripheral device responsive to said corresponding one of said set of peripheral command codes.

16. The programmable peripheral switch as recited in Claim 15, wherein said set of peripheral command codes and said set of corresponding peripheral response codes are compatible with a precision lightweight global positioning system receiver.

17. A method for selectively connecting a peripheral device to a server computing device, the method comprising the steps of:

(a.) providing a programmable peripheral switch including:

a peripheral port for electrically coupling the peripheral device thereto;

a plurality of host computer ports, each of said host computer ports for electrically coupling a respective one of a plurality of computing devices thereto;

host port state detection means electrically coupled to each of said host computer ports;

switching means electrically interposed between said peripheral port and each of said host computer ports; and

local handshaking means electrically coupled to said peripheral port;

(b.) electrically coupling the peripheral device to said peripheral port;

(c.) electrically coupling the server computing device to one of said plurality of host computer ports;

(d.) determining said operational state of each of said host computer ports using said host port state detection means;

(e.) establishing a communication path using said switching means between the peripheral device and one of said host computer ports at a state indicative of the server computing device being coupled thereto;

(f.) simulating communication from the server computing device to the peripheral device using said local handshaking means if none of said plurality of host computer ports is at said state indicative of the server computing device being coupled thereto; and

(g.) repeating the method at step (d.).



18. The method for selectively connecting a peripheral device to a server computing device as recited in Claim 17 further including the step of disabling said local handshaking means if said communications path has been established in step (e.).

19. The method for selectively connecting a peripheral device to a server computing device as recited in Claim 17 further including the step of enabling said local handshaking means if the server computing device terminates communication with the peripheral device.

20. The method for selectively connecting a peripheral device to a server computing device as recited in Claim 19 further including the step of allowing a predetermined time period to elapse between said enabling of said local handshaking means and said termination of communication between the server computing device and the peripheral device.

21. The method for selectively connecting a peripheral device to a server computing device as recited in Claim 17, wherein the communication simulation of step (f.) includes the steps of:

(1.) waiting for a peripheral command to be received from the peripheral device; and

(2.) returning to the peripheral device a corresponding peripheral response code to the peripheral device.